

Exhibit 2

U.S. Pat. No. 6,917,304 ("Wireless Multiplex Data Transmission System")
 Claim Chart Template

U.S. Pat. No. 6,917,304 v. [Proxicast LAN-Cell 3 VPN Router]

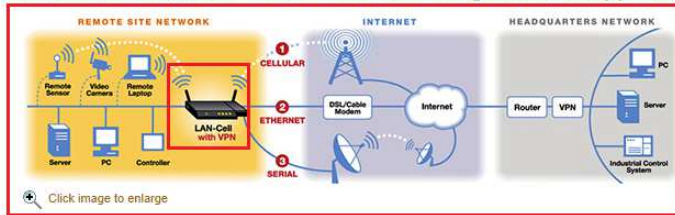
Claim Language	Proxicast LAN-Cell 3 VPN Router] ("Accused Product/device")
<p>1. A method of wireless transmission of data in digital and/or analogue format through a communications channel from at least two data sensors to a data processing means said method comprising the step of division of said channel into sub-channels and transmitting said data from said data sensors respectively through said sub-channels accordingly ; characterized by</p>	<p>The Accused Product practices a method for wireless transmission of data in digital format through a communications channel, for example, the channel between 2.4 GHz and approximately 2.5 GHz frequency band, among other bands.</p>  <p>http://shop.proxicast.com/shopping/lan-cell-3-3g-4g-lte-hspa-vpn-router.html</p> <div data-bbox="402 1186 1221 1806"> <p>LAN-Cell 3: Everything you need – in <u>one</u> unit:</p> <ul style="list-style-type: none"> • Open Upgradable Architecture - High Speed 3G/4G USB Modem Slot and External Antenna Ports • Supports LTE, HSPA+, EV-DO, 1x, HSPA, HSUPA, HSDPA, UMTS, EDGE, GPRS USB Modems • Enterprise-Class 3G/4G Router with Full VPN Client + Server. 25 Simultaneous Tunnels. Compatible with Cisco, Juniper, SonicWall, and other VPN Systems / Software • High Speed WiFi (802.11 b/g/n) 2x2 MIMO System - Max Data Rate 300Mbps. WiFi Available on the LAN and as a WAN Client Simultaneously • (4) Port 10/100/1000 Ethernet LAN Switch + (1) Ethernet WAN Port • Automatic Fail-Over Between 3G/4G Cellular & Ethernet WAN • Advanced Firewall, Quality-of-Service (QOS) & Security Functions • Patented USB Modem-LOCK Secures USB Modem In-Place • Easy Management with Web Interface & SNMP Management • Rugged Industrial Design with Metal Chassis </div> <p>http://web.archive.org/web/20151106201941/http://www.proxicast.com/index.htm</p>

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The Newest Fastest 4G LTE Mobile Router

The all new Proxicast LAN-Cell 3 3G/4G (LTE, HSPA+) router is the fastest and most advanced router we offer. It supports the new 4G standards and high speed modems. The LAN-Cell 3 is a rugged cellular router suitable for mission critical applications such as M2M, SCADA, telemetry, ATM, video surveillance and more...

Proxicast Knows 3G/4G Cellular Networking and Your Application



Unlike "consumer-grade" wireless 3G/4G routers and stand-alone cellular modems, Proxicast 3G/4G (LTE, HSPA+) routers are specifically designed to work with RTUs, PLCs, data loggers, video & web cams, controllers, industrial computers, and digital signage, as well as PCs and laptops. The LAN-Cell is also a great [satellite data link alternative](#) or backup for Low Earth Orbit (LEO) or VSAT satellite modem sites.

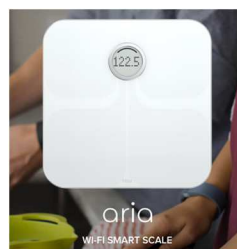
Proxicast 3G/4G (LTE, HSPA+) routers are in use on most of the world's major mobile wireless 3G/4G cellular networks enabling a diversity of applications from monitoring weather stations to processing ATM & credit card transactions. Proxicast can help you cost effectively integrate 3G/4G cellular data communications into your existing or planned [applications](#).

<http://web.archive.org/web/20151106201941/http://www.proxicast.com/index.htm>

Data is transmitted through the communications channel (the 2.4 GHz frequency spectrum), at least during internal testing and use, from at least two data sensors to a data processing means, e.g., one or more processing units in the Accused Device. On information and belief, the Accused Device includes processing units that perform its intended function(s).

For example, the network may include a local data sensor (e.g., a weight, impedance, temperature, air pressure, and humidity sensors) located on a 802.11b/g device that communicates with the Accused Product's 2.4 GHz communications channel. The 802.11b/g devices necessarily require a lower throughput than 802.11n devices because the 802.11b/g standard has a maximum throughput that is substantially lower than the throughput allowable using 802.11n.

Exemplary 802.11b/g device with weight and impedance sensors:



Sensors and Components

- Weight and BMI: Four load cells measure weight. BMI is calculated and displayed based on weight and height.
- Body composition: The scale measures body mass using bioimpedance analysis.

Syncing

Aria syncs automatically and wirelessly through your home wi-fi network. Network requirements:

• Wireless 802.11b

- WEP/WPA/WPA2 personal security
- Automatic (DHCP) IP setup (static IP configuration not supported)
- To set up for the first time, you'll need one of the following: Windows XP and later, Mac OS X 10.5 and up, iPhone 4S and later, iPad 3 gen. and later, and leading Android and Windows devices

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<https://www.fitbit.com/aria>. Additional exemplary 802.11b/g sensors include wireless temperature, air pressure, and humidity sensors.
<http://www.omega.com/pptst/wSeries.html>

The network, at least during internal testing and use, may in addition include a second data sensor (e.g., camera sensor as shown in the exemplary 802.11n device below) located on a 802.11n device that also communicates with the Accused Device's 2.4 GHz communications channel. These devices using the 802.11n standard have a higher throughput than is allowed under the 802.11b/g standard.

Exemplary 802.11n device with a digital camera and accompanying image sensor (e.g., CMOS, CCD, and other variations):



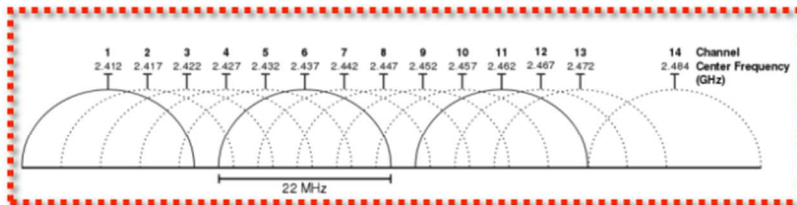
The cream of the current [Fire OS tablet crop](#), the 8.9-inch device [first launched in Sept 2013](#), and was refreshed this September. with a starting sticker price of \$429 USD. It packs a 2,560 x 1,600 pixel display, a Qualcomm Inc. (QCOM) [Snapdragon 805](#) chip (quad-core, 2.5 GHz), 2 GB of LPDDR3, and **802.11n Wi-Fi**.

<http://bit.ly/1Ylj6Bd>

The Accused Product comprises a multiplexer adapted to effect division of the communications channel into sub-channels, e.g., in the Accused Product the 2.4 GHz frequency spectrum is divided into communications channels for 802.11b/g, and communications channels for 802.11n. For example, there are 14 sub-channels within the 2.4 GHz band. (see below).

Channels 1, 6, and 11

First of all, let's talk about 2.4GHz, because as of the start of 2015, almost all WiFi installations still use the 2.4GHz band. **802.11ac**, which debuted in 2013, is driving adoption of 5GHz — but thanks to backwards compatibility and dual-radio routers and devices, 2.4GHz will continue to reign for a while.



All of the versions of WiFi up to and including 802.11n (a, b, g, n) operate between the frequencies of 2400 and 2500MHz. These paltry 100MHz are separated into 14 channels of 20MHz each. As you've probably worked out, 14 lots of 20MHz is a lot more than 100MHz — and as a result, every 2.4GHz channel overlaps with at least two (but usually four) other channels (see diagram above). As you can probably imagine, using overlapping channels is bad — in fact, it's the primary reason for awful throughput on your wireless network.

<http://www.extremetech.com/computing/179344-how-to-boost-your-wifi-speed-by-choosing-the-right-channel>

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a) said step of division of said communications channel being effected asymmetrically whereby the data carrying capacities of said sub-channels are unequal; and

The Accused Device is configured to be adapted to divide the 2.4 GHz frequency spectrum asymmetrically. The table below summarizes the how the Accused Device uses modulation and coding rate to determine how data is sent using the 2.4 GHz communications channel.

Modulation scheme and coding rate for 802.11g:

Symbol duration = 4 μ s

Data-carrying sub-carriers = 48

Coded bits / sub-carrier = 6 (64 QAM)

Coded bits / symbol = 6 x 48 = 288

Data bits / symbol: $3/4 \times 288 = 216$ bits/symbol

=> **bit rate = 216 bits / 4 μ s = 54 Mb/s**

<http://www.polytech2go.fr/topnetworks/lectures/book16pe1.pdf>

Modulation scheme and coding rate for 802.11n:

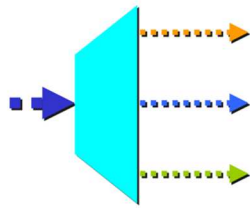
MCS Index	Type	Coding Rate	Spatial Streams	Data Rate (Mbps) with 20 MHz CH		Data Rate (Mbps) with 40 MHz CH	
				800 ns	400 ns (SGI)	800 ns	400 ns (SGI)
0	BPSK	1 / 2	1	6.50	7.20	13.50	15.00
1	QPSK	1 / 2	1	13.00	14.40	27.00	30.00
2	QPSK	3 / 4	1	19.50	21.70	40.50	45.00
3	16-QAM	1 / 2	1	26.00	28.90	54.00	60.00
4	16-QAM	3 / 4	1	39.00	43.30	81.00	90.00
5	64-QAM	2 / 3	1	52.00	57.80	108.00	120.00
6	64-QAM	3 / 4	1	58.50	65.00	121.50	135.00
7	64-QAM	5 / 6	1	65.00	72.20	135.00	150.00
8	BPSK	1 / 2	2	13.00	14.40	27.00	30.00
9	QPSK	1 / 2	2	26.00	28.90	54.00	60.00
10	QPSK	3 / 4	2	39.00	43.30	81.00	90.00
11	16-QAM	1 / 2	2	52.00	57.80	108.00	120.00
12	16-QAM	3 / 4	2	78.00	86.70	162.00	180.00
13	64-QAM	2 / 3	2	104.00	115.60	216.00	240.00
14	64-QAM	3 / 4	2	117.00	130.00	243.00	270.00
15	64-QAM	5 / 6	2	130.00	144.40	270.00	300.00
16	BPSK	1 / 2	3	19.50	21.70	40.50	45.00
...
31	64-QAM	5 / 6	4	260.00	288.90	540.00	600.00

<http://airmagnet.flukenetworks.com/assets/whitepaper/WP-802.11nPrimer.pdf>

Both 802.11g and 802.11n traffic is handled through an OFDM (orthogonal frequency division multiplexing) multiplexing scheme whereby data in a communication channel is split into N parallel data streams or multiple "subcarriers" (i.e., sub-channels). The OFDM scheme for the 802.11n standard allows for the 802.11n to handle higher data rates than 802.11g and earlier standards.

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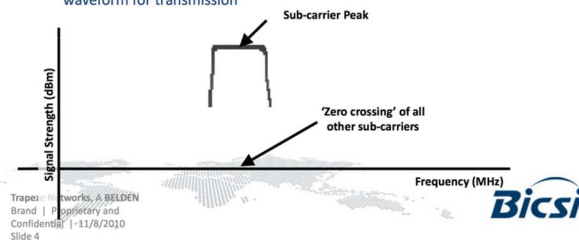
An OFDM system takes a data stream and splits it into N parallel data streams, each at a rate $1/N$ of the origin rate.



<http://www.polytech2go.fr/topnetworks/lectures/book16pe1.pdf>

OFDM Technology

- OFDM = Orthogonal Frequency Division Multiplexing
- Orthogonal
 - Data is transmitted in parallel on multiple narrowband sub-carriers
 - The spectral peak of adjacent sub-carriers coincides with the zero crossing of all the other carriers (i.e. they are orthogonal)
 - For 802.11a/g/n sub-carriers are spaced at 312.5KHz intervals
 - An Inverse Fast Fourier Transform (IFFT) is used to create a composite waveform for transmission



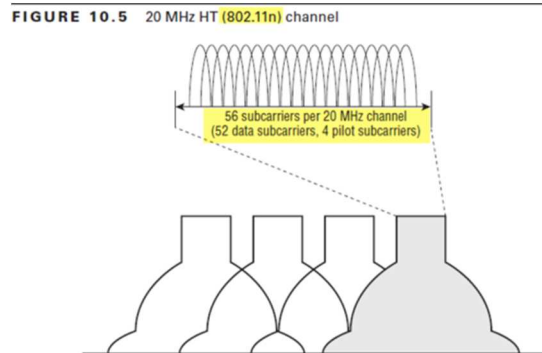
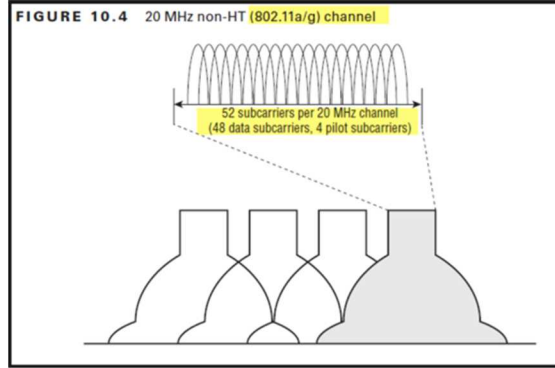
<https://www.bicsi.org/uploadedfiles/PDFs/Conferences/singapore2010/day2/2.8%20802.11n%20Deployment%20-%20Alfred%20Chan,%20Trapeze.pdf>

The communications channel is divided asymmetrically whereby data-carrying capacity of the sub-channels are unequal. 802.11g (20 MHz channel) data is divided into 52 sub-carriers (sub-channels) and 802.11n (20 MHz channel) data is divided into 56 sub-carriers (sub-channels). Using the 20MHz channel for 802.11n allows connection with legacy devices using 802.11a/g 20 MHz channels.

- Frequency Division
 - **802.11a/g 20MHz channels:** 52 sub-carriers (48 data, 4 pilot)
 - **802.11n 20MHz channels:** 56 sub-carriers (52 data, 4 pilot)
 - **802.11n 40MHz channel:** 114 sub-carriers (108 data, 6 pilot)
- Multiplexing
 - Blocks of data are multiplexed across the sub-carriers
 - Data is modulated on the channel using BPSK, QPSK, 16 or 64 QAM with FEC

<https://www.bicsi.org/uploadedfiles/PDFs/Conferences/singapore2010/day2/2.8%20802.11n%20Deployment%20-%20Alfred%20Chan,%20Trapeze.pdf>

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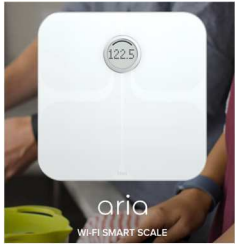
<http://mrncciew.com/2014/10/19/cwap-802-11n-introduction/>

The data-carrying capacity of the sub-channels are unequal -- 802.11g has a maximum data rate of 54 Mb/s and 802.11n has a maximum data rate of about 300 Mb/s.

MCS Index	Type	Coding Rate	Spatial Streams	Data Rate (Mbps) with 20 MHz CH		Data Rate (Mbps) with 40 MHz CH	
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5	64-QAM	2 / 3	1	52.00	57.80	108.00	120.00
6	64-QAM	3 / 4	1	58.50	65.00	121.50	135.00
7	64-QAM	5 / 6	1	65.00	72.20	135.00	150.00
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	<p>Symbol duration = 4 μs</p> <p>Data-carrying sub-carriers = 48</p> <p>Coded bits / sub-carrier = 6 (64 QAM)</p> <p>Coded bits / symbol = 6 x 48 = 288</p> <p>Data bits / symbol: $3/4 \times 288 = 216$ bits/symbol</p> <p>=> bit rate = 216 bits / 4 μs = 54 Mb/s</p> <p>http://www.polytech2go.fr/topnetworks/lectures/book16pe1.pdf</p>
<p>b) the data rate required for data transmission from said local sensors differing substantially between said at least two sensors; and</p>	<p>The accused product is 802.11b/g/n compliant and therefore is configured to adapt to both types of sensors, one which has 802.11b/g capability and the other which has 802.11n capability. The local data sensors (e.g., sensor(s) of the exemplary 802.11b/g device shown below, sensor(s) of the exemplary 802.11n device) to groups of sub-channels in accordance with different data rate requirements from the local sensors.</p> <p>Exemplary 802.11b/g device with weight and impedance sensors:</p> <div data-bbox="380 976 1081 1423">  <p>Sensors and Components</p> <ul style="list-style-type: none"> • Weight and BMI: Four load cells measure weight. BMI is calculated and displayed based on weight and height. • Body composition: The scale measures body mass using bioimpedance analysis. <p>Syncing</p> <p>Aria syncs automatically and wirelessly through your home wi-fi network. Network requirements:</p> <ul style="list-style-type: none"> • Wireless 802.11b • WEP/WPA/WPA2 personal security • Automatic (DHCP) IP setup (static IP configuration not supported) • To set up for the first time, you'll need one of the following: Windows XP and later, Mac OS X 10.5 and up, iPhone 4S and later, iPad 3 gen. and later, and leading Android and Windows devices </div> <p>https://www.fitbit.com/aria. Additional exemplary 802.11b/g sensors include wireless temperature, air pressure, and humidity sensors.</p> <p>http://www.omega.com/pptst/wSeries.html</p> <p>The network, at least during internal testing and use, may in addition include a second data sensor (e.g., camera sensor as shown in the exemplary 802.11n device below) located on a 802.11n device that also communicates with the Accused Device's 2.4 GHz communications channel. These devices using the 802.11n standard have a higher throughput than is allowed under the 802.11b/g standard.</p> <p>Exemplary 802.11n device with a digital camera and accompanying image sensor (e.g., CMOS, CCD, and other variations):</p>

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<http://bit.ly/1Ylj6Bd>

For example, when an 802.11b/g device communicates with the Accused Product, because the device can only send data at the data rate of the slower 802.11b/g standard, the Accused Product assigns the 802.11b/g device to an 802.11b/g channel. 802.11b/g data is allocated to the 48 data sub-channels (see below) in accordance with the data rate requirements of the 802.11b/g device's sensor, with 54 Mbps being the maximum data rate allocable to the 802.11 b/g device.

Symbol duration = 4 μ s

Data-carrying sub-carriers = 48

Coded bits / sub-carrier = 6 (64 QAM)

Coded bits / symbol = 6 x 48 = 288

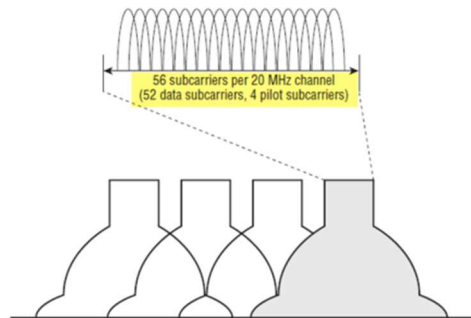
Data bits / symbol: $3/4 \times 288 = 216$ bits/symbol

=> **bit rate = 216 bits / 4 μ s = 54 Mb/s**

<http://www.polytech2go.fr/topnetworks/lectures/book16pe1.pdf>

For example, when an 802.11n device communicates with the Accused Product, because the device can send data at the substantially higher data rate of the 802.11n standard, the Accused Product assigns the 802.11n device to an 802.11n channel. 802.11n data (from e.g., the 802.11n device's video sensor) is allocated to 52 sub-channels (see below) in accordance with the data rate requirements of the 802.11n device's sensor, with 300 Mbps being the maximum data rate allocable to the 802.11n device.

FIGURE 10.5 20 MHz HT (802.11n) channel

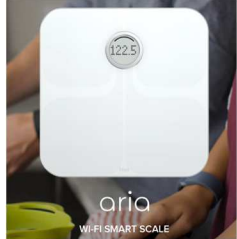



<http://mrncciew.com/2014/10/19/cwap-802-11n-introduction/>

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	<p>The data-carrying capacity of the sub-channels are unequal -- 802.11g has a maximum data rate of 54 Mb/s and 802.11n has a maximum data rate of 300 Mb/s.</p> <table><tr><th rowspan="2">MCS Index</th><th rowspan="2">Type</th><th rowspan="2">Coding Rate</th><th rowspan="2">Spatial Streams</th><th colspan="2">Data Rate (Mbps) with 20 MHz CH</th><th colspan="2">Data Rate (Mbps) with 40 MHz CH</th></tr><tr><th>800 ns</th><th>400 ns (SGI)</th><th>800 ns</th><th>400 ns (SGI)</th></tr><tr><td>0</td><td>BPSK</td><td>1 / 2</td><td>1</td><td>6.50</td><td>7.20</td><td>13.50</td><td>15.00</td></tr><tr><td>1</td><td>QPSK</td><td>1 / 2</td><td>1</td><td>13.00</td><td>14.40</td><td>27.00</td><td>30.00</td></tr><tr><td>2</td><td>QPSK</td><td>3 / 4</td><td>1</td><td>19.50</td><td>21.70</td><td>40.50</td><td>45.00</td></tr><tr><td>3</td><td>16-QAM</td><td>1 / 2</td><td>1</td><td>26.00</td><td>28.90</td><td>54.00</td><td>60.00</td></tr><tr><td>4</td><td>16-QAM</td><td>3 / 4</td><td>1</td><td>39.00</td><td>43.30</td><td>81.00</td><td>90.00</td></tr><tr><td>5</td><td>64-QAM</td><td>2 / 3</td><td>1</td><td>52.00</td><td>57.80</td><td>108.00</td><td>120.00</td></tr><tr><td>6</td><td>64-QAM</td><td>3 / 4</td><td>1</td><td>58.50</td><td>65.00</td><td>121.50</td><td>135.00</td></tr><tr><td>7</td><td>64-QAM</td><td>5 / 6</td><td>1</td><td>65.00</td><td>72.20</td><td>135.00</td><td>150.00</td></tr><tr><td>8</td><td>BPSK</td><td>1 / 2</td><td>2</td><td>13.00</td><td>14.40</td><td>27.00</td><td>30.00</td></tr><tr><td>9</td><td>QPSK</td><td>1 / 2</td><td>2</td><td>26.00</td><td>28.90</td><td>54.00</td><td>60.00</td></tr><tr><td>10</td><td>QPSK</td><td>3 / 4</td><td>2</td><td>39.00</td><td>43.30</td><td>81.00</td><td>90.00</td></tr><tr><td>11</td><td>16-QAM</td><td>1 / 2</td><td>2</td><td>52.00</td><td>57.80</td><td>108.00</td><td>120.00</td></tr><tr><td>12</td><td>16-QAM</td><td>3 / 4</td><td>2</td><td>78.00</td><td>86.70</td><td>162.00</td><td>180.00</td></tr><tr><td>13</td><td>64-QAM</td><td>2 / 3</td><td>2</td><td>104.00</td><td>115.60</td><td>216.00</td><td>240.00</td></tr><tr><td>14</td><td>64-QAM</td><td>3 / 4</td><td>2</td><td>117.00</td><td>130.00</td><td>243.00</td><td>270.00</td></tr><tr><td>15</td><td>64-QAM</td><td>5 / 6</td><td>2</td><td>130.00</td><td>144.40</td><td>270.00</td><td>300.00</td></tr><tr><td>16</td><td>BPSK</td><td>1 / 2</td><td>3</td><td>19.50</td><td>21.70</td><td>40.50</td><td>45.00</td></tr><tr><td>...</td><td>...</td><td>...</td><td>...</td><td>...</td><td>...</td><td>...</td><td>...</td></tr><tr><td>31</td><td>64-QAM</td><td>5 / 6</td><td>4</td><td>260.00</td><td>288.90</td><td>540.00</td><td>600.00</td></tr></table> <p>http://airmagnet.flukenetworks.com/assets/whitepaper/WP-802.11nPrimer.pdf</p> <p>Symbol duration = 4 μs</p> <p>Data-carrying sub-carriers = 48</p> <p>Coded bits / sub-carrier = 6 (64 QAM)</p> <p>Coded bits / symbol = 6 x 48 = 288</p> <p>Data bits / symbol: 3/4 x 288 = 216 bits/symbol</p> <p>=> bit rate = 216 bits / 4 μs = 54 Mb/s</p> <p>http://www.polytech2go.fr/topnetworks/lectures/book16pe1.pdf</p>	MCS Index	Type	Coding Rate	Spatial Streams	Data Rate (Mbps) with 20 MHz CH		Data Rate (Mbps) with 40 MHz CH		800 ns	400 ns (SGI)	800 ns	400 ns (SGI)	0	BPSK	1 / 2	1	6.50	7.20	13.50	15.00	1	QPSK	1 / 2	1	13.00	14.40	27.00	30.00	2	QPSK	3 / 4	1	19.50	21.70	40.50	45.00	3	16-QAM	1 / 2	1	26.00	28.90	54.00	60.00	4	16-QAM	3 / 4	1	39.00	43.30	81.00	90.00	5	64-QAM	2 / 3	1	52.00	57.80	108.00	120.00	6	64-QAM	3 / 4	1	58.50	65.00	121.50	135.00	7	64-QAM	5 / 6	1	65.00	72.20	135.00	150.00	8	BPSK	1 / 2	2	13.00	14.40	27.00	30.00	9	QPSK	1 / 2	2	26.00	28.90	54.00	60.00	10	QPSK	3 / 4	2	39.00	43.30	81.00	90.00	11	16-QAM	1 / 2	2	52.00	57.80	108.00	120.00	12	16-QAM	3 / 4	2	78.00	86.70	162.00	180.00	13	64-QAM	2 / 3	2	104.00	115.60	216.00	240.00	14	64-QAM	3 / 4	2	117.00	130.00	243.00	270.00	15	64-QAM	5 / 6	2	130.00	144.40	270.00	300.00	16	BPSK	1 / 2	3	19.50	21.70	40.50	45.00	31	64-QAM	5 / 6	4	260.00	288.90	540.00	600.00
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c) allocating data from said local data sensors to respective ones or groups of said sub-channels in accordance with the data carrying capacities of said	<p>The Accused Product includes is configured to allocate data from said local data sensors (e.g., sensor(s) of the exemplary 802.11b/g device shown below, sensor(s) of the exemplary 802.11n device) to groups of sub-channels in accordance with different data rate requirements from the local sensors.</p> <p>Exemplary 802.11b/g device with weight and impedance sensors:</p>																																																																																																																																																																				

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<p>sub-channels.</p>	<div data-bbox="378 193 1081 638">  <p>Sensors and Components</p> <ul style="list-style-type: none"> • Weight and BMI: Four load cells measure weight. BMI is calculated and displayed based on weight and height. • Body composition: The scale measures body mass using bioimpedance analysis. <p>Syncing</p> <p>Aria syncs automatically and wirelessly through your home wi-fi network. Network requirements:</p> <ul style="list-style-type: none"> • Wireless 802.11b • WEP/WPA/WPA2 personal security • Automatic (DHCP) IP setup (static IP configuration not supported) • To set up for the first time, you'll need one of the following: Windows XP and later, Mac OS X 10.5 and up, iPhone 4S and later, iPad 3 gen. and later, and leading Android and Windows devices </div> <p>https://www.fitbit.com/aria. Additional exemplary 802.11b/g sensors include wireless temperature, air pressure, and humidity sensors.</p> <p>http://www.omega.com/pptst/wSeries.html</p> <p>The network, at least during internal testing and use, may in addition include a second data sensor (e.g., camera sensor as shown in the exemplary 802.11n device below) located on a 802.11n device that also communicates with the Accused Device's 2.4 GHz communications channel. These devices using the 802.11n standard have a higher throughput than is allowed under the 802.11b/g standard.</p> <p>Exemplary 802.11n device with a digital camera and accompanying image sensor (e.g., CMOS, CCD, and other variations):</p> <div data-bbox="378 1129 1172 1331">  <p>The cream of the current Fire OS tablet crop, the 8.9-inch device first launched in Sept 2013, and was refreshed this September. with a starting sticker price of \$429 USD. It packs a 2,560 x 1,600 pixel display, a Qualcomm Inc. (QCOM) Snapdragon 805 chip (quad-core, 2.5 GHz), 2 GB of LPDDR3, and 802.11n Wi-Fi.</p> </div> <p>http://bit.ly/1Ylj6Bd</p> <p>For example, when an 802.11b/g device communicates with the Accused Product, because the device can only send data at the data rate of the slower 802.11b/g standard, the Accused Product assigns the 802.11b/g device to an 802.11b/g channel. 802.11b/g data is allocated to the 48 data sub-channels (see below) in accordance with the data rate requirements of the 802.11b/g device's sensor, with 54 Mbps being the maximum data rate allocable to the 802.11 b/g device.</p>
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Symbol duration = 4 μ s

Data-carrying sub-carriers = 48

Coded bits / sub-carrier = 6 (64 QAM)

Coded bits / symbol = 6 x 48 = 288

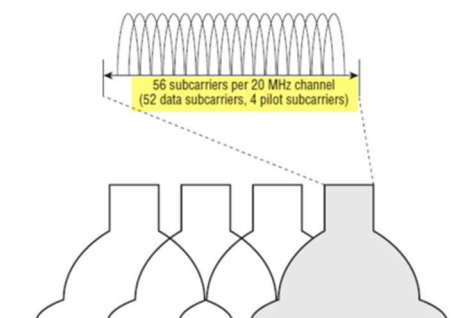
Data bits / symbol: $3/4 \times 288 = 216$ bits/symbol

=> **bit rate** = 216 bits / 4 μ s = **54 Mb/s**

<http://www.polytech2go.fr/topnetworks/lectures/book16pe1.pdf>

For example, when an 802.11n device communicates with the Accused Product, because the device can send data at the substantially higher data rate of the 802.11n standard, the Accused Product assigns the 802.11n device to an 802.11n channel. 802.11n data (from e.g., the 802.11n device's video sensor) is allocated to 52 sub-channels (see below) in accordance with the data rate requirements of the 802.11n device's sensor, with 300 Mbps being the maximum data rate allocable to the 802.11n device.

FIGURE 10.5 20 MHz HT (802.11n) channel



<http://mrnciew.com/2014/10/19/cwap-802-11n-introduction/>

The data-carrying capacity of the sub-channels are unequal -- 802.11g has a maximum data rate of 54 Mb/s and 802.11n has a maximum data rate of 300 Mb/s.

MCS Index	Type	Coding Rate	Spatial Streams	Data Rate (Mbps) with 20 MHz CH		Data Rate (Mbps) with 40 MHz CH	
				800 ns	400 ns (SGI)	800 ns	400 ns (SGI)
0	BPSK	1/2	1	6.50	7.20	13.50	15.00
1	QPSK	1/2	1	13.00	14.40	27.00	30.00
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3	16-QAM	1/2	1	26.00	28.90	54.00	60.00
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9	QPSK	1/2	2	26.00	28.90	54.00	60.00
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11	16-QAM	1/2	2	52.00	57.80	108.00	120.00
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13	64-QAM	2/3	2	104.00	115.60	216.00	240.00
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15	64-QAM	5/6	2	130.00	144.40	270.00	300.00
16	BPSK	1/2	3	19.50	21.70	40.50	45.00
...
31	64-QAM	5/6	4	260.00	288.90	540.00	600.00

<http://airmagnet.flukenetworks.com/assets/whitepaper/WP-802.11nPrimer.pdf>

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